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 Mullin/OU=CI/O=USEPA/C=US@EPA;CN=Fred Hauchman/OU=DC/O=USEPA/C=US@EPA;CN=Glenn
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 Briskin/OU=DC/O=USEPA/C=US@EPA;CN=KarenL Martin/OU=DC/O=USEPA/C=US@EPA;CN=Kate
 Fay/OU=R8/O=USEPA/C=US@EPA;CN=Ken Kopocis/OU=DC/O=USEPA/C=US@EPA;CN=Lisa
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From: CN=Janet Woodka/OU=DC/O=USEPA/C=US
Sent: Fri 7/27/2012 1:36:30 PM
Subject: Re: Bloomberg: Drought Helps Fracking Foes Build Momentum for Recycling

Thanks, Charles. This has been in several oil and gas trade journals over the past week or so.

----- Original Message -----

From: Charles Imohiosen

Sent: 07/27/2012 07:14 AM EDT

To: Ann Codrington; Cynthia Sonich-Mullin; Fred Hauchman; Glenn Paulson; Janet Woodka; Jeanne
 Briskin; KarenL Martin; Kate Fay; Ken Kopocis; Lisa Feldt; Sandra Connors; Ann Campbell; Jan
 Matuszko; Marcus Zobrist; Bob Sussman

Cc: Pamela Barr; Donald Maddox

Subject: Bloomberg: Drought Helps Fracking Foes Build Momentum for Recycling
 Bloomberg

Drought Helps Fracking Foes Build Momentum for Recycling

By Kasia Klimasinska and Jim Efstathiou Jr.

July 23, 2012 3:15 AM EDT

The worst U.S. drought in a half century is putting pressure on natural-gas drillers to conserve the millions of gallons of water used in hydraulic fracturing to free trapped gas and oil from underground rock.

From Texas to Colorado to Pennsylvania, farmers, activists and opponents of the technique, also known as fracking, are using the shortage of rain to push the industry to recycle water and reduce usage -- efforts that could prove costly to the industry.

One company, Devon Energy Corp. (DVN), estimates that recycling is as much as 75 percent costlier

than pumping wastewater into deep wells. That disposal method, common in the industry, has also drawn complaints because it is linked to earthquakes.

"We just would like the oil and gas companies to figure out better ways, maybe a better use of this water," Bill Midcap, renewable-energy development director at the Rocky Mountain Farmers Union covering Wyoming, Colorado and New Mexico, said in an interview. "It's a concern about the future, it is the concern about the price of water, as we look forward, and also taking water away from agriculture."

Environmentalists in Texas are lobbying the Legislature to pass water-conservation requirements during next year's session. In Pennsylvania, the Susquehanna River Basin Commission on July 16 suspended water intake for companies including Talisman Energy Inc. (TLM), Chesapeake Energy Corp. (CHK) and Exxon Mobil Corp. (XOM)

Fracking has boosted the nation's output of natural gas, pushing prices down more than 70 percent in the past four years and toppling coal as the chief fuel to generate power. Gas has helped cut electricity bills, reduce emissions of greenhouse gases when producing power and lift employment in states with large reserves, such as Colorado, Pennsylvania and Texas.

The nation's biggest reserve of trapped gas is in the Marcellus Shale, which stretches from New York to Tennessee.

"The vast majority of water used to aid in responsible natural-gas development across Pennsylvania is treated and recycled for future use," Kathryn Klaber, the president of the Marcellus Shale Coalition, a trade group representing gas producers, said in an e-mail. "Wide-scale deployment of water- recycling technology, which was pioneered by Marcellus operators, has further reduced the need to source fresh water for well-completion activities."

Marcellus drillers in Pennsylvania use less than a 10th of a percent of the 9.48 billion gallons of water consumed every day in the state, the Pennsylvania Environmental Protection Department has reported.

Talisman, the Calgary-based company that operates in Texas and Pennsylvania, said its fracking hasn't been hampered by water restrictions. "Significant amounts of rainfall" were reported in the Texas region where it has rigs, and Marcellus drilling was scaled back when gas prices fell, Berta Gomez, a spokeswoman, said in an e-mail.

Natural gas for August delivery fell 0.3 cents to \$3.078 per million British thermal units on the New York Mercantile Exchange today. Futures have climbed 3 percent this year.

About 55 percent of the contiguous U.S. was in moderate to extreme drought at the end of June, the highest percentage since December 1956, according to the National Climatic Data Center on July 17. Last month was the 14th-warmest ever and the 10th-driest June based on records going back to 1895, the center said.

Environment Texas, an Austin-based environmental group, urged the state Legislature to pass bills requiring that water be reused after fracking and limiting the amount of fresh water that can be used.

"There are a lot of problems with fracking, and so we want to minimize the damage from fracking, including by requiring recycling," Luke Metzger, the group's director, said in an interview.

Costs to haul fresh water for fracking has increased as the drought forces drillers to buy from more distant suppliers, according to Dave Burnett, director of technology at the Energy Research Institute of Texas A&M University in College Station. More companies are recycling wastewater and using brackish water not suitable for drinking.

"The use of fresh groundwater in south Texas has dropped by 50 percent in the last 12 months," Burnett said in an interview. It costs about 7 cents a gallon to recycle drilling wastewater for reuse, not counting transportation, Burnett said.

Recycling is 50 percent to 75 percent more expensive than sending polluted water into deep wells, according to a presentation given last month to Texas lawmakers by Devon Energy and provided by the Legislature. Disposal of wastewater by injecting it into deep wells, however, has been linked to earthquakes -- something that has drawn the attention of regulators.

Seismic events related to energy development have been measured in Alabama, Arkansas, California, Colorado, Illinois, Louisiana, Mississippi, Nebraska, Nevada, New Mexico, Ohio, Oklahoma and Texas, according to a National Research Council study.

Last year, Arkansas regulators shut four disposal wells in the Fayetteville Shale, where companies are drilling for gas, after an

outbreak of earthquakes near the town of Guy, including a magnitude-4.7 temblor. Drillers must now provide information on the geology of disposal-well sites and avoid known faults when planning wells.

The Ohio Department of Natural Resources in March proposed rules for wastewater disposal, including bans on drilling into some rock formations and requiring geology reviews before wells are approved. Beginning in March 2011, there have been 12 temblors near a disposal well in Youngstown, including a magnitude-4 quake that struck on New Year's Eve.

Metzger expects other states will follow whatever Texas implements in regards to recycling.

"In this drought, especially in western states, local and state governments are increasingly going to look to oil and gas companies to recycle their water, in order to protect local supplies," he said.

State Representative Jim Keffer, a Republican, wrote legislation that passed in Texas last year requiring operators to disclose how much water they are using to frack a well. He isn't planning to add rules for conserving water, Ky Ash, his chief of staff, said in an e-mail.

In northern Colorado, energy companies bought 3 percent of the water auctioned by the Northern Colorado Water Conservancy District on March 16, said Brian Werner, a spokesman for the district. Farmers bought 92 percent and cities got the rest.

Drought conditions in the region this year mean less water will be available in 2013, Werner said.

To contact the reporter on this story: Kasia Klimasinska in Washington at kklimasinska@bloomberg.net Jim Efstathiou Jr. in New York at jefstathiou@bloomberg.net

To contact the editor responsible for this story: Jon Morgan at jmorgan97@bloomberg.net

Charles Imohiosen
Counselor to the Deputy Administrator
Office of the Administrator
US Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.

Sent via Blackberry

----- Original Message -----

From: Ann Codrington

Sent: 07/18/2012 06:13 PM EDT

To: Ann Codrington; Charles Imohiosen; Cynthia Sonich-Mullin; Fred Hauchman; Glenn Paulson; Janet Woodka; Jeanne Briskin; KarenL Martin; Kate Fay; Ken Kopocis; Lisa Feldt; Sandra Connors; Ann Campbell; Jan Matuszko; Marcus Zobrist; Bob Sussman

Cc: Pamela Barr; Donald Maddox

Subject: HF Water Recycling Plan Follow up

Hi,

At last Friday's meeting on developing a partnership to reuse waste water from unconventional oil and gas production, we agreed to produce a discussion outline for use with potential partners and states. A draft of this outline is attached. You should be receiving a scheduler from Bob's office for the next discussion.

Thanks,

Ann

[attachment "recycling discussion.doc" deleted by Charles Imohiosen/DC/USEPA/US]

Ann Codrington
Director, Drinking Water Protection Division
Office of Ground Water and Drinking Water

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